

A STUDY OF TERRITORIAL BEHAVIOR AND ROLE COGNITIVE STRUCTURE AT INTERIOR DESIGN WORKSPACE

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ABSTRACT

Different cultures cause different patterns and contexts of territorial behavior. This study intends to use role cognitive structure as background to deal with the territorial behavior at workspace. It hopes to find out relation between different role cognitive structure and territorial behavior. This study tries to discuss the role cognitive structure mainly from two perspectives, "close/distant" and "class distinction". It uses structural questionnaire and purposive sampling to randomly select 140 office clerks of interior design companies to participate in this study. Not only using structural questionnaire via SPSS 17 to analyze variables from results and data, but also discussing the relation among role cognitive structure, territorial behavior at workspace, and substantial territories. The followings are the major findings and conclusions. (1) The territorial behavior at workspace varies obviously due to close/distant cognition of role cognitive structure and indicates a ranking phenomenon from close/distance relation. (2) The territorial behavior at workspace diverges noticeably regarding class distinction of position of interactive objects which implies context of job ranking of level and distinction.

KEYWORDS: Cognitive Structure, Workspace, Territorial Behavior

INTRODUCTION

As the environment evolves and develops, people become demanding to its living conditions and pursue mental and spiritual fulfillment. Because Functionalism used to minimize human needs of spatial planning and ignore mental diversities and behavior patterns. It barely achieves the fundamental design goal; moreover, it even affects human mental and spiritual status severely. However, balance between human needs and practical design planning relies heavily on understanding of interaction between physical environment and behavior. Disclosures and findings can be found from various environmental psychology research studies on physical environment.

Literature reviews indicate that different cultural backgrounds affect behavior in physical environment differently. Relative research studies are mostly based on western theories and cases, the systematic findings regarding Taiwanese cultural background and behavior seem severely inadequate. Therefore, this study hopes to examine the relation between territorial behavior and physical environment at workspace based on different role cognition. Moreover, this study uses territoriality in environmental psychology as its variable to discuss relation among territorial behavior at workspace (TBWS), physical environment arrangement, and role cognitive structure (RCS). The two main objects of this study are to find out (1) whether RCS can be used to explain TBWS, and (2) relation between class distinction in role structure and physical workspace environment.

LITERATURE REVIEWS

Territoriality

Territoriality originates from a basic concept of animal behavior research, which explains the behavior of certain species claims one place and defends it from its own species (Lorenz, 1963 ; Wynne-Edwards, 1989; Wilson & Foster, 1992). Human, on the other hand, reveal more complicated territorial behavior due to various factors and reasons. Edward T. Hall published *The Hidden Dimension* in 1966 and categorized four types of human territorial behavior according to animal territoriality and distance restriction, i.e. intimate distance, personal distance, social distance, and public distance. Different distances represent forms of various human activities and meanings, affected by cultures result in diverse contexts (Chen, 198; Chuang, 1996, 1997).

Most psychologists believe that territoriality is related to locality behavior, while some consider attitudes as part of territoriality (Sack, 1983: 55). Altman (1975:107) points out “A self/other boundary-regulation mechanism that involves personalization or marking of a place or object and communication that it is ‘owned’ by a person or group.” Brower v (1996: 96-103) also argues that territoriality as a special relation and agreement that exists between individuals and groups, in an objective form of occupancy, dominance, and habitant.

It is clear that human territoriality involves occupancy and habitant of certain space or object by individuals or groups where it is marked in any layout for defense and claimed ownership. Territorial behavior is not only the mechanism to maintain ownership of certain space or object, but the agreement of the special relation between individuals and groups, which presented in occupancy, dominance, and habitant through interpersonal distance.

Role Cognitive Structure Theory

This study mainly uses RCS to discuss physical environment connections between it and territorial behavior. Two cognitive concepts, i.e. “close/distant” and “class distinction” are firstly introduced by K. K. Hwang in 1995, from common ethics (benevolence, justice, and courtesy) of Confucianism. Hwang believes that any interpersonal connection should be based on close/distant and class distinction to ensure each other’s position. Benevolence is to love people that you should love, and justice is to respect people that deserve it; while courtesy is the difference response to different love and respect. The two cognitive dimensions are empirically verified its positions in role cognition in 1997 by Chuang and Yang. Therefore, this study uses the two dimensions- close/distant and class distinction based on RCS to examine TBWS.

However, the class distinction does not appear clearly due to age and seniority. This study defines class distinction as office position, higher position equals higher class distinction and vice versa.

Research Method

This study wants to find out relation between RCS and TBWS. It not only explores the connection between close/distant and class distinctions, but also analyzes relation between physical environment and class cognition.

Hypothesis

- **Null Hypothesis (H_0):** TBWS would remain the same when close/distant RCS with object.
- **Null Hypothesis (H_1):** TBWS would remain the same when class distinction RCS with object.

Research Design and Questionnaire

This study uses questionnaire as research tool with purposive sampling to randomly select 140 office clerks in interior design companies. 14 question items are categorized as two major parts, i.e. participant basic information and variable question.

- Participant basic information Questions 1 to 3 are gender, age, and office position respectively.
- Territorial behavior survey on close/distant and class distinction

This study uses 6 relation types to represent close/distant cognition (c/dC), i.e. “your family”, “close friend or colleague” (emotional relation, ER), “colleague in the same office”, “colleague in other office” (mixed relation, MR), “work-related client or supplier”, and “total stranger” (functional relation, FR). And the other 3 relation types to represent class distinction cognition (cdC), i.e. “higher position”, “equal position” and “lower position”. Questions 4 to 14 are divided into 5 categories as followed.

- **Occupancy:** Use your office space (Q4) and put overcoats on your chair (Q5).
- **Interpersonal Distance:** Distance in-between when talking (Q6), seating choice (Q7), and move around your workspace (Q8).
- **Dominance and Control:** Ask you to remove your desk arrangement (Q9) and move pot plants in the office (Q10).
- **Territorial Defense:** Borrow office key (Q11).
- **Territory Invasion:** Questions 12 to 14 are pat you on the shoulder in the office, look for objects in your drawer without asking, and go through your desk without permission respectively.

Data Analysis

The study conducts two trial tests and one pilot test for the initial questionnaire to adjust and modify it before formal questionnaire. SPSS.17.0 is used to analyze the questionnaire results. Followings are instructions of each analysis step.

- Basic information and initial analysis is to sort out frequency distribution and percentage statistics.
- Steps of analysis of relation between variables, i.e. close/distant, class distinction, and territorial behavior are as followed.
 - This study uses chi-squared test to examine its hypothesis. Also, it uses test of homogeneity of proportions to analyze percentage of each territorial behavior variable based on research data attributes and design variables in the questionnaire to see if significant difference exists due to the close/distant and class distinction connection among each participant.
 - When results from test of homogeneity of proportions show significance, posteriori comparison by Haberman (1978) is used to compare the standardized residual value after cell correction in chi-squared test.
- Followings are steps of analysis of class distinction variable and physical environment variable.

- Proportional reduction in error (PRE): Somers'd is used to measure the asymmetric relation between ordinal scale variables, i.e. class distinction and physical environment.
- Chi-squared test and posteriori comparison: chi-squared test of homogeneity of proportions and posteriori comparison are also used to examine the hypothesis and variable relation.

RESEARCH RESULTS AND ANALYSIS

Individual Attribute Distribution

This study collects 140 valid questionnaires in total. Followings are individual attribute distribution: (1) Gender: 65 males (46.4%), 68 females (48.6%), and 7 unidentified (5.5%). (2) Age: 2 under 20 (1.4%), 21-25 (20, 14.3%), 26-30 (35, 25%), 31-35 (33, 23.6%), 36-40 (19, 13.6%), 41-45 (15, 10.7%), 46-50 (11, 7.9%), and 4 over 50 (3.5%). (3) Office position: 28 at management level (20%), 30 at middle management level (21.4%), and 82 at non-management level (58.6%).

Relation between Close/Distant and Territorial behavior at Workspace

Analyzing relation between close/distant and TBWS after initial understanding of participants. Primary results are used to analyze relation between close/distant cognition with five types of territorial behavior based on the research variables, i.e. occupancy, interpersonal distance, dominance and control, territorial defense, and territorial invasion. Details are showed in Table 1.

Table 1: Chi-Squared Test of Territorial Behavior Relation

Relation between Territorial Behavior		Pearson X^2	P	DF
c/dC and occupancy		251.087	.000	5
c/dC and interpersonal distance		107.061	.000	5
c/dC and dominance and control	Dominance of territorial behavior	140.729	.000	5
	Control of territorial behavior	109.157	.000	5
c/dC and territorial defense		216.536	.000	5
c/dC and territorial invasion	No significance	145.312	.000	5
	Significance	366.932	.000	5

P: Asymptotic significance, two-tailed

Table 1 indicates significance among all five types of territorial behavior when participants interact with others. Table 2 shows cross analysis standardized residuals after correction. And five types of territorial behavior all show significance in each c/dC.

Table 2: Standardized Residuals after Correction from Close/Distant Cognition and Territorial Behavior

Territorial Behavior c/dC	Occupancy	Interpersonal Distance	Dominance and Control		Territorial Defense	Territorial Invasion	
			Dominance	Control		No Significance	Significance
ERI (your family)	9.6 *	3.6 *	8.7 *	7.2 *	12.9 *	9.9 *	19.1 *
ERII (close friend or colleague)	7.9 *	7.3 *	5.2 *	3.9 *	3.0 *	3.8 *	1.5
MRI (colleague in the same office)	.5	-.1	-1.4	1.0	.3	-1.4	-2.6
MRII (colleague in other office)	-3.5 *	.2	-3.3 *	-2.7 *	-3.1 *	-3.2 *	-2.7 *

Table 2: Contd.,

FRI (work-related client or supplier)	-7.3 *	-4.7 *	-5.1 *	-5.2 *	-5.6 *	-5.0 *	-3.3 *
FRII (total stranger)	-9.0 *	-6.3 *	-5.3 *	-5.4 *	-5.8 *	-5.2 *	-3.2 *

* represent the absolute value of standardized residual after correction in cell chi-squared test reaches 2.58 critical value of .01 significance.

Table 2 points out that Q13- 'look for object in your drawer without asking' has the highest significance among all. The standardized residual after correction of ERI is 19.1 indicates it is the most acceptable relation type when territory is invaded. -3.2 of standardized residual after correction of FRII clearly explain that territorial invasion acceptance relies heavily on close/distant cognition.

Table 2 also shows that territorial defense has obvious difference of acceptance next to territorial invasion. The 12.9 standardized residual after correction of ERI is significantly higher than 2.58 critical value of .01 significance indicates that participants are mentally least defensive to people with ERI connection. However, to people with FRII, FRI, and FRII connection, the territorial defense acceptance is totally the opposite, due to these standardized residual after correction are negative with absolute value higher than 2.58 critical value of .01.

The research results show that participants express different TBWS with close/distant RCS. The closer RCS it gets, the less rejection of territorial behavior it shows. And the result proves the hypothesis that TBWS would be different when close/distant RCS with object.

Relation between Class Distinction and Territorial Behavior at Workspace

Again, primary results are used to analyze relation between class distinction cognition with five types of territorial behavior based on the research variables, i.e. occupancy, interpersonal distance, dominance and control, territorial defense, and territorial invasion. Details are showed in Table 3 and Table 4.

Table 3: Chi-Squared Test of Class Distinction Cognition and Territorial Behavior

CDC and TBWS		Pearson χ^2	P	DF
CDC and occupancy		18.920	.000	2
CDC and interpersonal distance	Interpersonal distance within individual workspace	2.636	.000	2
	Seating choice	31.415	.000	2
CDC and dominance and control	Dominance territorial behavior	53.548	.000	2
	Control territorial behavior	28.964	.000	2
CDC and territorial defense		19.739	.000	2
CDC and territorial invasion	No significance	92.341	.000	2
	Significance	19.765	.000	2

P: Asymptotic significance, two-tailed

This study also uses the five behavior variables to analyze the relation between cdC and territorial behavior. Table 4 indicates the cross analysis standardized residuals after correction from cdC and acceptable territorial behavior. Asterisk in table 4 shows significance of .01 is commonly seen among different cdC in different territorial behavior.

Table 4: Standardized Residuals after Correction from Class Distinction Cognition and Territorial Behavior

Territorial Behavior CDC	Occupancy	Interpersonal Distance	Dominance and Control		Territorial Defense	Territorial Invasion	
		Seating Choice	Dominance	Control		No Significance	Significance
Higher position	3.7*	-3.6 *	7.3*	5.4*	4.4*	9.6*	4.4*
Equal position	.1	3.2*	-3.1 *	-2.6 *	-1.9	-3.2 *	-2.0
Lower position	-3.8*	.4	-4.3 *	-2.9*	-2.6*	-4.5*	-2.5

Represent the absolute value of standardized residual after correction in cell chi-squared test reaches 2.58

Critical value of .01 significance

The standardized residual after correction in table 4 results in significance in responsive behavior of others using their seats, seating choice, dominance and control, territorial defense, and territorial invasion despite class distinction. Moving around your workspace is the only question that shows no significance among all variables. The result verifies the hypothesis that different TBWS leads to different class distinction CRS with others.

CONCLUSIONS

According to data analysis and discussion, two hypotheses of this study regarding c/dC and cdC in RCS at workspace are confirmed and verified. It shows that TBWS is different depends on c/dC and cdC in RCS with objects. Followings are the findings and conclusions from this study.

- TBWS is significantly different from object to object regarding its close/distant cognition in role cognitive structure. Results analysis suggests that TBWS is affected by close/distant cognition. Close cognition at workspace results in high territoriality, while distant cognition at workspace leads to low territoriality. Territorial behavior is considered as presentation of human interaction involved in close/distant relation. High territoriality could imply a distant relation, while low territoriality suggests the intention of improving each other's interaction.
- TBWS is significantly different from object to object regarding its class distinction cognition in role cognitive structure. Results analysis suggests that TBWS is affected by class distinction cognition. People are less defensive to those who are in higher position than themselves and more acceptable to their dominance and control at workspace. As for those who are in the equal position, most people are less offensive to others' territorial behavior. However, people have high territoriality for those who are in the lower position and express the class distinction in every territorial behavior.

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